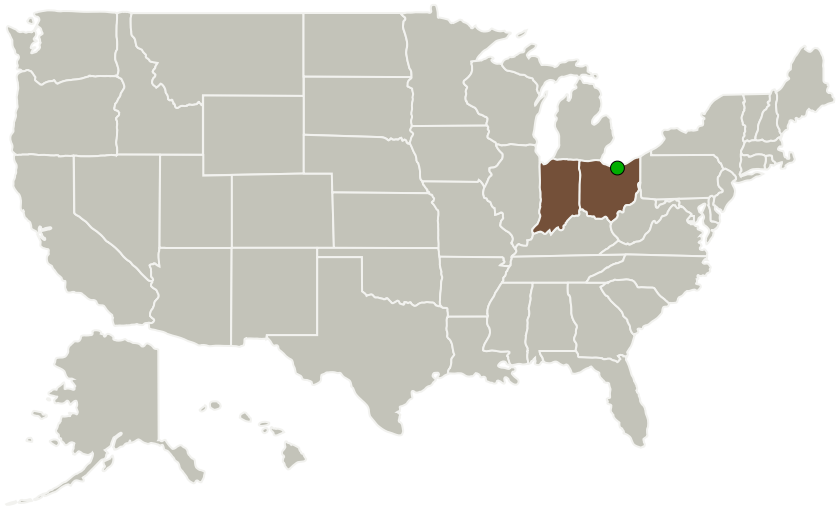
A Reconfigurable Transmitter and Receiver for Aeronautical Telemetry Applications, Phase I

Completed Technology Project (2017 - 2017)

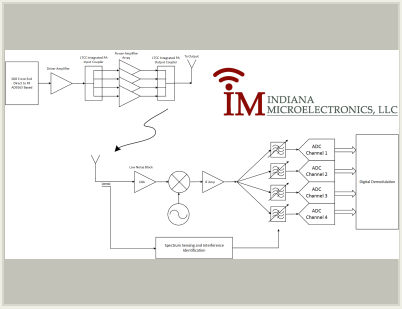
Project Introduction

This project focuses on the development of a reconfigurable microwave transmitter and receiver for telemetry applications. Both the transmitter and receiver are able to operate at any frequency between the L and C Bands. The software defined transmitter is able to change its center frequency, output bandwidth and output power as well as operate with multiple simultaneous output frequencies. The flexible receiver is also capable of reconfiguring its center frequencies and bandwidths to match the output characteristics of the transmitter. Interference sensing and mitigation techniques also allow the receiver to provide pristine signal reception in over-crowded microwave environments.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Indiana Microelectronics, LLC	Lead Organization	Industry Small Disadvantaged Business (SDB)	West Lafayette, Indiana
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio



A Reconfigurable Transmitter and Receiver for Aeronautical Telemetry Applications, Phase I Briefing Chart Image

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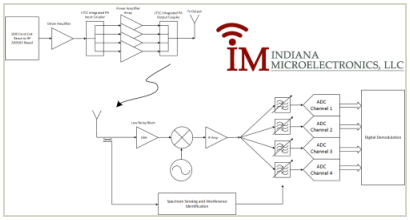
Primary U.S. Work Locations	
Indiana	Ohio

Images



Briefing Chart Image
A Reconfigurable Transmitter and Receiver for Aeronautical Telemetry Applications, Phase I Briefing Chart Image
(https://techport.nasa.gov/image/128878)

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Indiana Microelectronics, LLC

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

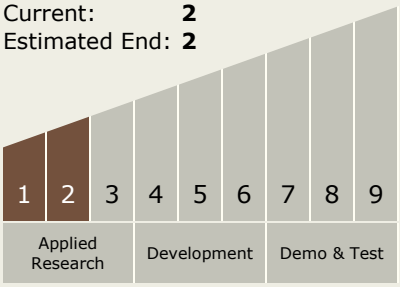
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Eric Hoppenjans

Technology Maturity (TRL)

Start: **1**
Current: **2**
Estimated End: **2**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.4 Microwave, Millimeter-, and Submillimeter-Waves

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System